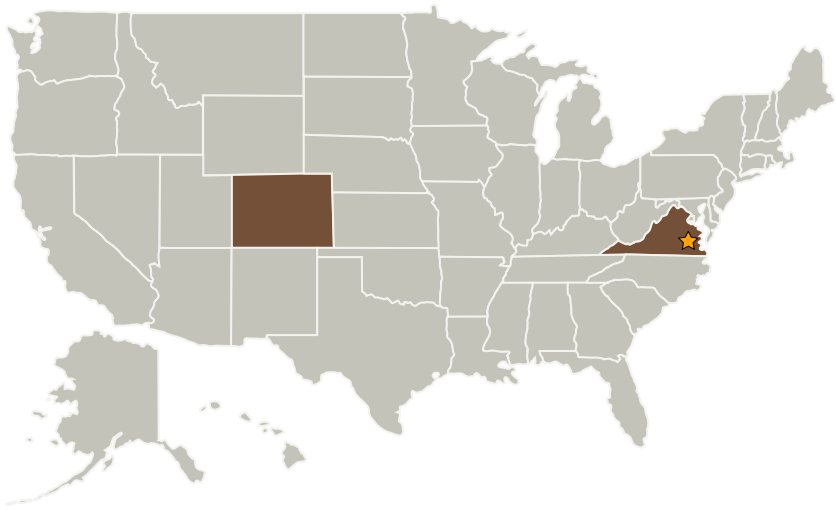
Large Format Uncooled Focal Plane Array, Phase I

Completed Technology Project (2004 - 2004)

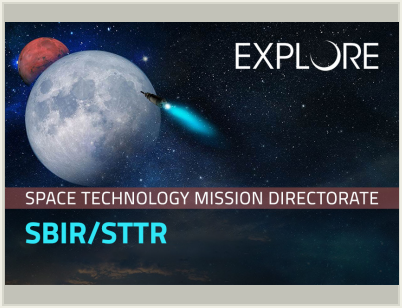
Project Introduction

Uncooled focal plane arrays have improved dramatically and array sizes of 320x240 elements in a 50-?m pitch are commercially available at affordable cost. Black Forest Engineering proposes to design a readout integrated circuit to allow fabrication of a large format 1024x768 element uncooled sensor. The significant innovation is the use of 0.18 ?m CMOS design rules, high duty cycle signal sampling, and power reduction techniques to create a thermal sensor that provides high sensitivity readout of large format microbolometer detection elements sensitive to 8-14 ?m infrared. The thermal IR sensor will be low weight, small volume, low power and robust making it compatible with remote sensing applications such as aircraft, balloon-borne and space flight platforms

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
Black Forest Engineering, LLC	Supporting Organization	Industry	Colorado Springs, Colorado



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Colorado	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Stephen Gaalema

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes